FEDERAL SUPPLY CLASS
5940

RATIONALE

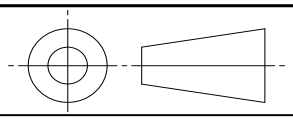
AS81824/14C IS BEING STABILIZED BECAUSE THE PROCESSES/PRODUCT IS CONSIDERED MATURE AND THE COMMITTEE DOES NOT ANTICIPATE FUTURE TECHNICAL CHANGES. STABILIZATION DOES NOT IMPLY THE PROCESS OR PRODUCT IS UNACCEPTABLE FOR APPLICATIONS FOR WHICH IT IS DESIGNED. ANY TECHNICAL CHANGES NOTED BY A SUPPLIER OR USER WHICH RESULTS IN A PRODUCT OR REQUIREMENT CHANGE WILL BE ADDRESSED BY A NEW REVISION. QUALIFIED SUPPLIERS ARE STILL MAINTAINED.

STABILIZED NOTICE

THIS DOCUMENT HAS BEEN DECLARED "STABILIZED" BY SAE AE-8C2 TERMINATING DEVICES AND TOOLING COMMITTEE AND WILL NO LONGER BE SUBJECTED TO PERIODIC REVIEWS FOR CURRENCY. USERS ARE RESPONSIBLE FOR VERIFYING REFERENCES AND CONTINUED SUITABILITY OF TECHNICAL REQUIREMENTS. NEWER TECHNOLOGY MAY EXIST.

ISSUED 2014-04 REVISED 2016-01 STABILIZED 2024-11

THIRD ANGLE PROJECTION



For more information on this standard, visit
https://www.sae.org/standards/content/AS81824/14C/

CUSTODIAN: AE-8C2

PROCUREMENT SPECIFICATION: AS81824

SAE INTERNATIONAL

AEROSPACE STANDARD

SPLICE, ELECTRIC, PERMANENT, CRIMP STYLE, NICKEL-COATED COPPER, INSULATED, ENVIRONMENT RESISTANT, CLASS 1, 175 °C, HEATLESS SEALING

AS81824™/14

REV. C

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NOTICE

THE COMPLETE REQUIREMENTS FOR PROCURING THE PRODUCT DESCRIBED HEREIN SHALL CONSIST OF THIS DOCUMENT AND THE LATEST ISSUE OF AS81824.

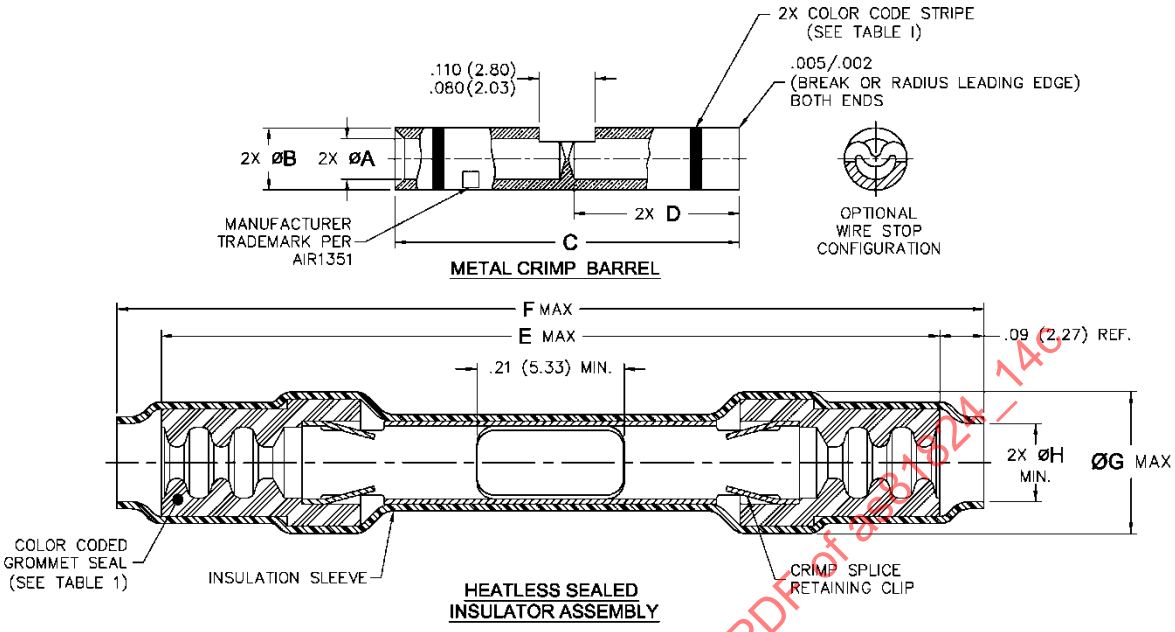

FIGURE 1 - HEATLESS SPLICE ASSEMBLY

NOTES:

1. CONTOURS MAY VARY FROM THAT SHOWN.

TABLE 1 - FIGURE 1 CONFIGURATION AND DIMENSIONS

PART NUMBER	WIRE RANGE 1/	ØA	ØB 2/	C	D	E MAX.	F MAX.	ØG MAX.	ØH MIN.	COLOR CODE 3/	WEIGHT LB (KG) PER 1,000 PCS. MAX
M81824/14-1	20, 22, 24, 26	.050 (1.27) .045 (1.14)	.080 (2.03) .075 (1.91)	.510 (12.95) .490 (12.45)	.245 (6.22) .225 (5.71)	1.230 (31.24)	1.450 (36.83)	.22 (5.59)	.085 (2.16)	RED	1.9 (0.9)
M81824/14-2	16, 18	.069 (1.75) .064 (1.63)	.106 (2.70) .101 (2.57)	.585 (14.86)	.280 (7.11)	1.400 (35.56)	1.622 (41.20)	.26 (6.60)	.116 (2.95)	BLUE	3.3 (1.5)
M81824/14-3	12, 14	.102 (2.59) .097(2.46)	.153 (3.89) .147 (3.73)	.565 (14.35)	.260 (6.60)	1.535 (38.99)	1.750 (44.45)	.32 (8.13)	.164 (4.17)	YELLOW	5.6 (2.5)

1/ ONLY ONE WIRE IS PERMITTED ON EACH END OF THE SPLICE. THE USE OF TWO OR MORE WIRES ON EITHER END OF THE SPLICE WILL RESULT IN LOSS OF ENVIRONMENT RESISTANCE OF THE SPLICE SEALING SYSTEM.
2/ "B" DIAMETER SHALL NOT INCLUDE COLOR STRIPES.
3/ THE METAL CRIMP BARREL SHALL BE MARKED WITH ONE COLOR STRIPE ON EACH END OF THE BARREL OR OPTIONALLY WITH TWO COLOR STRIPES ON ONE END OF THE BARREL.

REQUIREMENTS: ALL REQUIREMENTS SHALL CONSIST OF THIS DOCUMENT AND THE LATEST ISSUE OF AS81824.

1. DESIGN:

   THE SPLICE SHALL BE DESIGNED IN ACCORDANCE WITH FIGURE 1 AND TABLE 1. UNLESS OTHERWISE INDICATED, DIMENSIONS ARE IN INCHES. METRIC EQUIVALENTS (MM) TO THE NEAREST 0.01 MM ARE GIVEN FOR GENERAL INFORMATION AND REFERENCE ONLY. VALUES ARE CALCULATED AND ROUNDED ON 1 INCH = 25.4 MM. THE SPLICE ASSEMBLY SHALL CONSIST OF A TWO-PIECE DESIGN WHICH INCLUDES THE METAL CRIMP BARREL AND INSULATOR ASSEMBLY. CONTINUOUS OPERATING TEMPERATURE SHALL BE -65 TO +175 °C.

   THE INSULATOR ASSEMBLY IS SELF-SEALING AND DOES NOT REQUIRE THE APPLICATION OF HEAT TO CREATE A SEAL. THE APPLICATION OF HEAT WILL HAVE NO IMPACT ON THE PERFORMANCE OF THE DEVICE.

2. MATERIALS:

   METAL CRIMP BARREL: COPPER ALLOY PER ASTM B1, B2, B3, B75/B75M, B187/187M, B280, B301/B301M, F68; OR SAE J461, J463. FINISH WILL BE NICKEL PER AMS-QQ-N-290, CLASS 2.

   INSULATION SLEEVE: MODIFIED FLUOROPOLYMER PER AMS-DTL-23053/18. ALTERNATE MATERIAL: POLYVINYLIDENE FLUORIDE PER AMS-DTL-23053/8.

   SEAL GROMMETS: FLUOROSILICONE RUBBER.

   RETAINING CLIP: BERYLLIUM COPPER PER ASTM B194, SAE J463 OR COPPER NICKEL UNS C70250.

3. QUALIFICATION:

   QUALIFICATION TESTS SHALL BE IN ACCORDANCE WITH AS81824 QUALIFICATION INSPECTION TABLE EXCEPT AS FOLLOWS:

   a. TWENTY-TWO (22) SAMPLES SHALL BE TESTED FOR EACH DASH NUMBER AND DISTRIBUTED IN ACCORDANCE WITH AS81824 QUALIFICATION INSPECTION TABLE.

   b. TWO SAMPLE SETS SHALL BE PROVIDED. EIGHTEEN (18) SPLICE ASSEMBLIES SHALL BE TERMINATED IN ACCORDANCE WITH THE SUPPLIER ASSEMBLY INSTRUCTIONS WITH M22759/11 WIRE. FOUR (4) SPLICE ASSEMBLIES SHALL BE TERMINATED IN ACCORDANCE WITH THE SUPPLIER ASSEMBLY INSTRUCTIONS WITH M22759/44, /91 OR /191 WIRE FOR SIZES 26, 18, 14. THESE FOUR SPLICE ASSEMBLIES SHALL BE SUBJECTED TO GROUP V TESTING ONLY. NO ETCHING OR SOLVENT TREATING OF THE ASSOCIATED WIRE INSULATION SHALL BE PERMITTED.

   c. GROUPS II, III, AND VIII ARE NOT APPLICABLE

   d. GROUP V. MODIFIED TEMPERATURE CYCLING AND HEAT AGING TEST: BOTH TESTS SHALL BE PERFORMED AS SPECIFIED IN AS81824 EXCEPT TEMPERATURE CYCLING SHALL BE THE MAXIMUM RATED TEMPERATURE OF 175 °C AND TEMPERATURE AGING SHALL BE 190 °C.

   e. ADD: GROUP IX: INSULATION SLIP RESISTANCE TEST: TWO (2) SPLICE ASSEMBLIES SHALL BE TERMINATED IN ACCORDANCE WITH THE SUPPLIER ASSEMBLY INSTRUCTIONS TO MAXIMUM WIRE SIZE (20, 16, AND 12). TERMINATED SPLICE ASSEMBLY SHALL WITHSTAND 10 POUNDS TENSILE LOAD APPLIED AT THE RATE OF 1 INCH PER MINUTE. FOLLOWING THE INSULATION RESISTANCE TEST SAMPLES SHALL BE SUBJECTED TO INSULATION RESISTANCE TEST AS SPECIFIED IN AS81824, TEST TIME OF 60 SECONDS (SEE FIGURE 2).

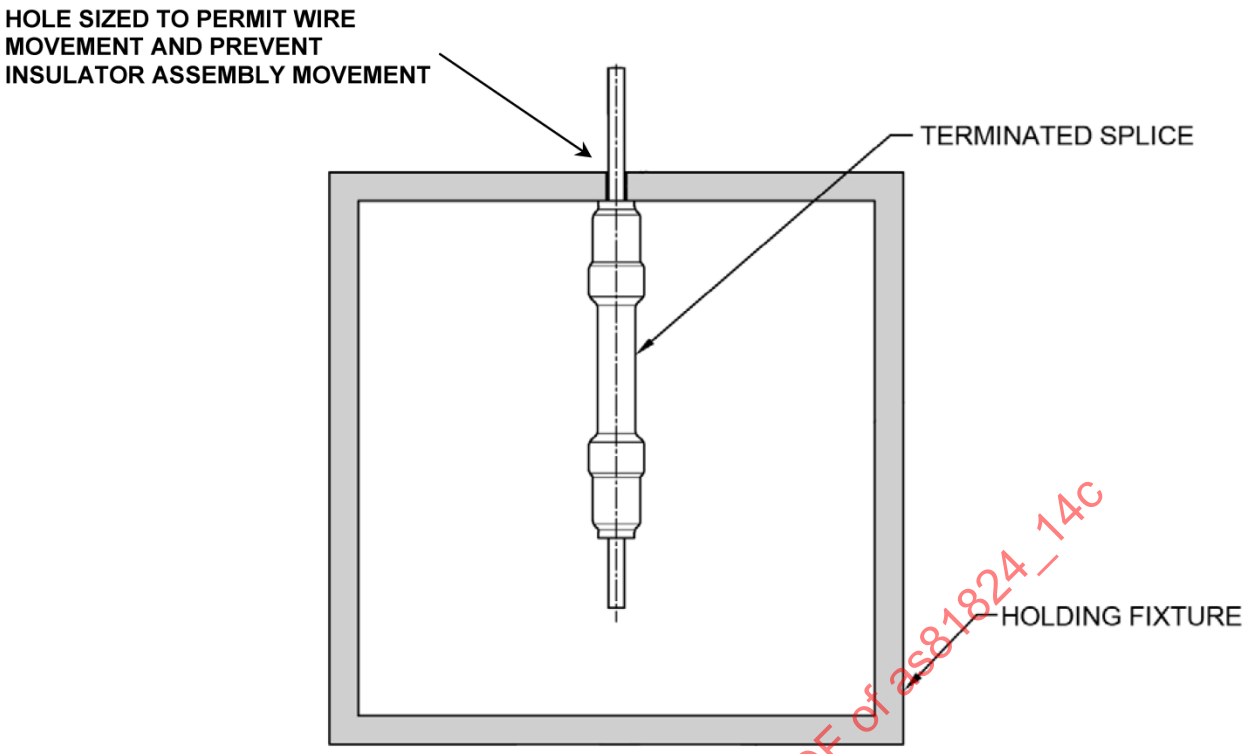

FIGURE 2 - FIXTURE FOR INSULATION SLIP RESISTANCE TEST

4. TOOLING:

   SEE TABLE 2.

TABLE 2 - CRIMP TOOLS

PART NUMBER	CRIMP TOOL NUMBER	DIE TYPE CRIMP TOOLS	
		TOOL NUMBER	DIE NUMBER
M81824/14-1	M22520/37-01	M22520/5-01 OR	M22520/5-103
		M22520/10-01	M22520/10-104
M81824/14-2	M22520/37-01	M22520/5-01 OR	M22520/5-103
		M22520/10-01	M22520/10-104
M81824/14-3	M22520/37-01	M22520/5-01 OR	M22520/5-102
		M22520/10-01	M22520/10-103

5. ASSEMBLY INSTRUCTIONS:

   REFER TO SUPPLIER'S ASSEMBLY INSTRUCTIONS FOR INSTALLING DETAILS.

APPLICATION NOTES:

1. INTENDED USE:

   a. THIS SPLICE IS INTENDED FOR USE IN MAKING ENVIRONMENTALLY PROTECTED PERMANENT JOINTS CONNECTING ONE TO ONE WIRES FOR WIRES FALLING WITHIN THE DIAMETER RANGE SPECIFIED IN THIS SPECIFICATION WITHOUT THE APPLICATION OF HEAT (HEATLESS INSTALLATION).

   b. THE CRIMPING OF THE METAL CRIMP BARREL IS INTENDED TO BE PERFORMED PRIOR TO INSERTION OF THE METAL CRIMP BARREL INTO THE INSULATOR ASSEMBLY.

2. THIS SPLICE MAY BE USED WITH TIN, NICKEL AND SILVER COATED CONDUCTORS, WHICH FALL WITHIN THE WIRE JACKET RANGE AS INDICATED PER TABLE 3. THE APPLICATION SHALL NOT EXCEED THE 175 °C RATING OF THE SPLICE.